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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,799	03/26/2004	Wei-Guan YAU	MTKP0150USA	2798

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EXAMINER	
WEST, JEFFREY R	
ART UNIT	PAPER NUMBER
2857	

DATE MAILED: 07/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/708,799	YAU, WEI-GUAN	
	Examiner	Art Unit	
	Jeffrey R. West	2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 May 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-13 and 15-34* is/are pending in the application.

4a) Of the above claim(s) *7,8,10,24,25 and 27* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-6,9,11-13,15-23,26, and 28-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 May 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1, 3-13, and 15-17 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter, specifically, non-statutory process claims.

35 U.S.C. 101 requires that the claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." State Street, 149 F.3d at 1373, 47 USPQ2d at 1601-02. The purpose of this requirement is to limit patent protection to inventions that possess a certain level of "real world" value, as opposed to subject matter that represents nothing more than an idea or concept, or is simply a starting point for future investigation or research (Brenner v. Manson, 383 U.S. 519, 528-36, 148 USPQ 689, 693-96); In re Ziegler, 992, F.2d 1197, 1200-03, 26 USPQ2d 1600, 1603-06 (Fed. Cir. 1993)).

It has also been held that a process that consists solely of the manipulation of an abstract idea is not concrete or tangible. See In re Warmerdam, 33 F.3d 1354, 1360, 31 USPQ2d 1754, 1759 (Fed. Cir. 1994). See also Schrader, 22 F.3d at 295, 30 USPQ2d at 1459.

Claims 1, 3-13, and 15-17 are not claimed as statutory subject matter because the claimed method provides a conditional statement wherein only one of the

conditions satisfy the statutory requirements. Independent claims 1 and 13 result in a final step of "generating an acknowledgement event if the count value reaches the threshold value". However, the claims do not guarantee that the count value ever reaches the threshold value and therefore under conditions when the count value does not reach the threshold value, the claimed method only carries out the manipulation of threshold values. This manipulation of threshold values is only a starting point for any implementation of the thresholds and is furthermore a manipulation of abstract ideas without producing a concrete and tangible result.

Applicant's attention is further directed to MPEP § 2106 with respect to the examples of claimed processes that do not achieve a practical application, specifically, the discussion regarding a step of "updating alarm limits" found to constitute changing the number value of a variable to represent the result of the calculation (Parker v. Flook, 437 U.S. 584, 585, 198 USPQ 193, 195 (1978))

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 3, 5, 12, 18-20, 22, and 29, as may best be understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,084,441 to Kawai in view of U.S. Patent No. 6,141,296 to Progar.

With respect to claim 1, Kawai discloses a method for dynamically compensating for the imprecision of a timer, the timer repeatedly triggering a reference event according to a predetermined time interval (column 7, lines 30-38 and column 8, lines 25-46), the method comprising the steps of storing a threshold value (i.e. numerical limit value) (column 9, lines 48-52), storing a count value corresponding to a plurality of reference events generated from the timer (i.e. count of clock pulses) (column 9, lines 59-61), tracking an actual time interval between a first reference event and a second reference event occurring after the first reference event (column 7, lines 54-55 and 59-64 and column 8, lines 7-8), calculating a compensation value from the predetermined time interval and the actual time interval (column 8, lines 5-10), utilizing the compensation value for reducing a difference between the count value and the threshold value (column 10, lines 4-22) and generating an acknowledgement event if the count value reaches the threshold value (column 10, lines 24-28).

With respect to claim 3, Kawai discloses that the step of tracking the actual time interval further comprises tracking the actual time interval between every two adjacent reference events (column 7, lines 59-64 and column 9, lines 16-19).

With respect to claim 5, Kawai discloses that the step of calculating the compensation value further comprises determining the compensation value by calculating a ratio of the actual time interval to the predetermined time interval (column 8, lines 5-10).

With respect to claim 12, Kawai discloses that the reference events are system interrupts (column 7, lines 59-64).

With respect to claim 18, Kawai discloses a timer system comprising a timer for repeatedly triggering a reference event according to a predetermined time interval (column 7, lines 30-38 and column 8, lines 25-46), a first storage unit for storing a preset threshold value (column 9, lines 48-52 and 59-61), a second storage unit for storing a count value corresponding to a plurality of reference events generated from the timer (column 9, lines 59-61), a tracking module electrically connected to the timer for tracking an actual time interval between a first reference event and a second reference event occurring after the first reference event (column 7, lines 54-55 and 59-64 and column 8, lines 7-8), a calculating module electrically connected to the tracking module for calculating a compensation value from the predetermined time interval and the actual time interval (column 8, lines 5-10), and a compensating module electrically connected to the calculating module and at least one of the first and second storage units for reducing a difference between the count value and the threshold value (column 10, lines 4-22).

With respect to claim 19, Kawai discloses a decision logic inherently electrically connected to the first and second storage units for generating an acknowledgement event if the count value reaches the threshold value (i.e. comparing the stored count value to the corrected and stored threshold value) (column 10, lines 24-28).

With respect to claim 20, Kawai discloses that the first and second storage units, the calculating module, compensating module, and the decision logic are positioned

within a microprocessor, and the timer is driven by the microprocessor (column 7, lines 30-58 and Figure 2).

With respect to claim 22, Kawai discloses that the compensating module determines the compensation value by calculating a ratio of the actual time interval to the predetermined time interval (column 8, lines 5-10).

With respect to claim 29, Kawai discloses that the reference events are system interrupts of the timer system (column 7, lines 59-64).

As noted above the invention of Kawai teaches many of the features of the claimed invention and while the invention of Kawai does teach tracking an actual time interval between each of the reference events to calculate a compensation value that is used for reducing a difference between the count value and the threshold value, Kawai does not specifically indicate that the actual time interval between each of the reference events is used to calculate a plurality of compensation values, each compensation value corresponding to the predetermined time interval and one of the actual time intervals.

Progar teaches a time-of-day clock assembly having means for correcting imprecision of a timer repeatedly triggering interrupts (column 1, lines 4-7 and column 3, lines 25-37) comprising tracking an actual time interval between each of the interrupts, each actual time interval corresponding to an actual time between a first interrupt and a second interrupt occurring after the first interrupt (column 6, lines 5-9), calculating a plurality of compensation values, each compensation value corresponding to the predetermined time interval and one of the actual time intervals

(column 6, lines 9-22), and utilizing each compensation value to form a dynamically calculated compensation value by accumulating a plurality of actual time intervals corresponding to a plurality or reference events for reducing the difference between the actual timer value and a desired timer value (column 5, lines 19-58 and column 6, lines 24-51).

It would have been obvious to one having ordinary skill in the art to modify the invention of Kawai to specify that the actual time interval between each of the reference events is used to calculate a plurality of compensation values, each compensation value corresponding to the predetermined time interval and one of the actual time intervals, as taught by Progar, because while the invention of Kawai only calculates one compensation value thereby only correcting the associated reference event count once, the combination, as suggested by Progar, would have improved the invention of Kawai by providing repeated updating of the count value to provide increased and continuous accuracy, while also allowing more precise updating and overall operational efficiency through the determination and accumulation of fraction error values over user desired time intervals (column 1, lines 41-53, column 5, lines 1-17 and column 5, line 59 to column 6, line 4).

5. Claims 13, 15, 17, 30, and 34, as may best be understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,903,251 to Chapman in view of U.S. Patent No. 6,141,296 to Progar.

With respect to claim 13, Chapman discloses a method for dynamically compensating for the imprecision of a timer, the timer repeatedly triggering a reference event (column 3, line 64 to column 4, line 19), the method comprising the steps of storing a threshold value (column 5, lines 1-2) and a count value (column 5, lines 52-53), tracking an actual time interval between every two reference events (column 5, lines 27-32), and updating the count value by a value calculated through accumulating a plurality of actual time intervals corresponding to a plurality of reference events (column 5, lines 27-37 and column 6, lines 1-5).

With respect to claim 15, Chapman discloses that the step of tracking the actual time interval further comprises tracking the actual time interval between every two adjacent reference events (column 5, lines 27-32).

With respect to claim 17, Chapman discloses that the reference events are system interrupts (column 3, lines 64-68).

With respect to claim 30, Chapman discloses a timer system comprising a timer for repeatedly triggering a reference event (column 3, line 64 to column 4, line 19), a first storage unit (i.e. register) for storing a threshold value (column 5, lines 1-2), a second storage unit (i.e. register) for storing a count value (column 4, lines 63-64 and column 5, lines 52-53), a tracking module electrically connected to the timer for tracking an actual time interval between every two reference events (column 5, lines 27-32), and a calculating module electrically connected to the tracking module for updating the count value by a value calculated through accumulating a plurality of

actual time intervals corresponding to a plurality of reference events (column 5, lines 27-37 and column 6, lines 1-5 and Figure 2).

With respect to claim 34, Chapman discloses that the reference events are system interrupts of the timer system (column 3, lines 64-68).

Chapman also discloses that the tracking module comprises a clock generator for generating a reference clock, and the tracking module utilizes the reference clock for computing a time value corresponding to the actual time interval between every two adjacent reference events (column 4, lines 20-29, column 5, lines 27-32 and Figure 2).

Chapman further discloses that the first storage unit, the second storage unit, and the calculating module, are positioned within a microprocessor, and the timer is driven by the microprocessor (column 4, lines 20-51 and Figure 2).

As noted above, the invention of Chapman teaches many of the features of the claimed invention, and while the invention of Chapman does teach tracking an actual time interval between every two reference events and updating the count value by a value calculated through accumulating a plurality of actual time intervals corresponding to a plurality of reference events, Chapman does not explicitly indicate that the count value is updated according to a value being dynamically calculated by accumulating a plurality of actual time intervals.

Progar teaches a time-of-day clock assembly having means for correcting imprecision of a timer repeatedly triggering interrupts (column 1, lines 4-7 and column 3, lines 25-37) comprising tracking an actual time interval between each of

the interrupts, each actual time interval corresponding to an actual time between a first interrupt and a second interrupt occurring after the first interrupt (column 6, lines 5-9), calculating a plurality of compensation values, each compensation value corresponding to the predetermined time interval and one of the actual time intervals (column 6, lines 9-22), and utilizing each compensation value to form a dynamically calculated compensation value by accumulating a plurality of actual time intervals corresponding to a plurality or reference events for reducing the difference between the actual timer value and a desired timer value (column 5, lines 19-58 and column 6, lines 24-51).

It would have been obvious to one having ordinary skill in the art to modify the invention of Chapman to explicitly indicate that the count value is updated according to a value being dynamically calculated by accumulating a plurality of actual time intervals, as taught by Progar, because while the invention of Chapman calculates one compensation value thereby only correcting the associated reference event count once, the combination, as suggested by Progar, would have improved the invention of Chapman by providing repeated updating of the count value to provide increased and continuous accuracy, while also allowing more precise updating and overall operational efficiency through the determination and accumulation of fraction error values over user desired time intervals (column 1, lines 41-53, column 5, lines 1-17 and column 5, line 59 to column 6, line 4).

6. Claims 16 and 33, as may best be understood, are rejected under 35 U.S.C.

103(a) as being unpatentable over Chapman in view of Progar and further in view of U.S. Patent No. 3,889,189 to Lode.

As noted above, the invention of Chapman and Progar teaches many of the features of the claimed invention and while the invention of Chapman and Progar does teach that the tracking module comprises a clock generator for generating a reference clock, and the tracking module utilizes the reference clock for computing a time value corresponding to the actual time interval between every two adjacent reference events (Chapman; column 4, lines 20-29, column 5, lines 27-32 and Figure 2), and while one having ordinary skill in the art would understand the necessity to reset a time value before measuring subsequent time intervals, the combination does not explicitly teach this feature.

Lode teaches a digital time measurement system comprising a counter for tracking an actual time interval including a method for resetting an existing time value before tracking the actual time interval (column 60, lines 51-56).

It would have been obvious to one having ordinary skill in the art to modify the invention of Chapman and Progar to explicitly teach resetting the time value before tracking an actual time interval, as taught by Lode, because, as suggested by Lode and considered well-known in the art, the combination would have insured that the newly measured interval is accurate by clearing any time value remaining from a previously measured interval which would skew results (column 60, lines 51-56).

7. Claims 1, 3, 5, 9, 11-13, 15, 17-20, 22, 26, 28-32, and 34, as may best be

understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,896,321 to Kawahara in view of U.S. Patent No. 4,903,251 to Chapman and further in view of U.S. Patent No. 6,141,296 to Progar.

Kawahara discloses a self-monitoring system including a timer for determining the processing time of a unit (abstract), the timer/counter repeatedly triggering a reference event according to a predetermined time interval (column 3, lines 31-35), the method comprising the steps of storing a threshold value (column 3, lines 1-4), storing a count value corresponding to a plurality of reference events generated from the timer/counter (column 2, lines 5-8 and 42-44), and generating an acknowledgement event if the count value reaches the threshold value (column 3, lines 1-4 and 15-20).

Kawahara discloses that the reference events are system interrupts (column 3, lines 31-35).

Kawahara further discloses a decision logic electrically connected to the first and second storage units for generating an acknowledgement event (i.e. alarm) if the count value reaches the threshold value (column 3, lines 1-4 and 15-20 and Figure 1).

As noted above, the invention of Kawahara teaches acknowledging when a number of counted interrupts reaches a predetermined threshold with the interrupts being reference events triggered according a predetermined frequency (column 3, lines 31-35). Kawahara, however, does not include a corresponding method for correcting the number of counted interrupts.

Chapman teaches a method for dynamically compensating for the imprecision of a timer, the timer repeatedly triggering a reference event (column 3, line 64 to column 4, line 19), the method comprising the steps of storing a count value (column 5, lines 52-53), tracking an actual time interval between every two reference events (column 5, lines 27-32), and updating the count value by a value calculated through accumulating a plurality of actual time intervals corresponding to a plurality of reference events (column 5, lines 27-37 and column 6, lines 1-5).

Chapman teaches calculating a compensation value from the predetermined time interval and the actual time interval wherein calculating a compensation value further comprises determining the compensation value by calculating a ratio of the actual time interval to the predetermined time interval (column 5, lines 27-37).

Chapman teaches that the step of utilizing the compensation value comprises adding the compensation value to the count value (column 6, lines 1-5) or subtracting the compensation value from the count value (i.e. adding a negative) without adjusting a threshold voltage (column 6, lines 31-34).

Chapman teaches that the step of tracking the actual time interval further comprises tracking the actual time interval between every two adjacent reference events (column 5, lines 27-32).

Chapman teaches that the reference events are system interrupts (column 3, lines 64-68).

Chapman teaches a timer system comprising a timer for repeatedly triggering a reference event (column 3, line 64 to column 4, line 19), a storage unit (i.e. register)

for storing a count value (column 4, lines 63-64 and column 5, lines 52-53), a tracking module electrically connected to the timer for tracking an actual time interval between every two reference events (column 5, lines 27-32), and a calculating module electrically connected to the tracking module for updating the count value by a value calculated through accumulating a plurality of actual time intervals corresponding to a plurality of reference events (column 5, lines 27-37 and column 6, lines 1-5 and Figure 2).

Chapman teaches that the reference events are system interrupts of the timer system (column 3, lines 64-68).

Chapman also teaches that the tracking module comprises a clock generator for generating a reference clock, and the tracking module utilizes the reference clock for computing a time value corresponding to the actual time interval between every two adjacent reference events (column 4, lines 20-29, column 5, lines 27-32 and Figure 2).

Chapman further teaches that the storage unit, counting module, calculating module, and compensating module, are positioned within a microprocessor, and the timer is driven by the microprocessor (column 4, lines 20-51 and Figure 2).

It would have been obvious to one having ordinary skill in the art to modify the invention of Kawahara to include a corresponding method for correcting the number of counted interrupts, as taught by Chapman, because, as suggested by Chapman, the combination would have improved the accuracy of the invention of Kawahara by correcting the interrupt count determined by the interrupt processing units of

Kawahara through the application of a compensation value to account for frequency errors (column 1, lines 6-17 and 30-35).

Further, since the invention of Kawahara teaches counting the number of interrupts until the count value reaches an alarm threshold and the invention of Chapman teaches correcting the number of counted interrupts to account for timing drift by adding and/or subtracting a compensation value to the count value, without adjusting a threshold voltage, the combination would have utilized the compensation value for reducing a difference between the count value and the threshold value by adding and/or subtracting the compensation value when the threshold value is less than/greater than the count value.

Further still, since the invention of Kawahara teaches a decision logic electrically connected to the first and second storage units for generating an acknowledgement event (i.e. alarm) if the count value reaches the threshold value and the invention of Chapman teaches that the storage unit, counting module, calculating module, and compensating module are positioned within a microprocessor, the combination would have also included the decision logic and other storage units positioned within the microprocessor.

As noted above, the invention of Kawahara and Chapman teaches many of the features of the claimed invention, and while the invention of Kawahara and Chapman does teach tracking an actual time interval between every two reference events and updating the count value by a value calculated through accumulating a plurality of actual time intervals corresponding to a plurality of reference events, the

combination does not explicitly indicate that the count value is updated according to a value being dynamically calculated by accumulating a plurality of actual time intervals.

Progar teaches a time-of-day clock assembly having means for correcting imprecision of a timer repeatedly triggering interrupts (column 1, lines 4-7 and column 3, lines 25-37) comprising tracking an actual time interval between each of the interrupts, each actual time interval corresponding to an actual time between a first interrupt and a second interrupt occurring after the first interrupt (column 6, lines 5-9), calculating a plurality of compensation values, each compensation value corresponding to the predetermined time interval and one of the actual time intervals (column 6, lines 9-22), and utilizing each compensation value to form a dynamically calculated compensation value by accumulating a plurality of actual time intervals corresponding to a plurality or reference events for reducing the difference between the actual timer value and a desired timer value (column 5, lines 19-58 and column 6, lines 24-51).

It would have been obvious to one having ordinary skill in the art to modify the invention of Kawahara and Chapman to explicitly indicate that the count value is updated according to a value being dynamically calculated by accumulating a plurality of actual time intervals, as taught by Progar, because while the invention of Kawahara and Chapman calculates one compensation value thereby only correcting the associated reference event count once, the combination, as suggested by Progar, would have improved the invention of Kawahara and Chapman by providing

repeated updating of the count value to provide increased and continuous accuracy, while also allowing more precise updating and overall operational efficiency through the determination and accumulation of fraction error values over user desired time intervals (column 1, lines 41-53, column 5, lines 1-17 and column 5, line 59 to column 6, line 4).

8. Claims 4, 16, 21, and 33, as may best be understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawahara in view of Chapman and Progar and further in view of U.S. Patent No. 3,889,189 to Lode.

As noted above, Kawahara in combination with Chapman and Progar teaches many of the features of the claimed invention and while the invention of Kawahara, Chapman, and Progar does teach that the tracking module comprises a clock generator for generating a reference clock, and the tracking module utilizes the reference clock for computing a time value corresponding to the actual time interval between every two adjacent reference events (Chapman; column 4, lines 20-29, column 5, lines 27-32 and Figure 2), and while one having ordinary skill in the art would understand the necessity to reset a time value before measuring subsequent time intervals, the combination does not explicitly teach this feature.

Lode teaches a digital time measurement system comprising a counter for tracking an actual time interval including a method for resetting the time value before tracking the actual time interval (column 60, lines 51-56).

It would have been obvious to one having ordinary skill in the art to modify the invention of Kawahara, Chapman, and Progar to explicitly teach resetting the time value before tracking an actual time interval, as taught by Lode, because as suggested by Lode, and considered well known in the art, the combination would have insured that the newly measured interval is accurate by clearing any time value remaining from a previously measured interval which would skew results (column 60, lines 51-56).

9. Claims 6 and 23, as may best be understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawahara in view of Chapman and Progar and further in view of U.S. Patent No. 4,374,358 to Hirose.

As noted above, Kawahara in combination with Chapman and Progar teaches many of the features of the claimed invention and while the invention of Kawahara, Chapman, and Progar does teach determining a compensation value as a ratio of the actual time interval and the predetermined time interval (Chapman; column 5, lines 28-36) and applying the compensation value to the count value wherein the count value is an integer (Chapman, column 6, lines 1-5), the combination does not explicitly include calculating the compensation value as an integer closest to the ratio.

Hirose teaches an apparatus for measuring the oscillation frequency of a voltage controlled oscillator comprising means for multiplying a counter value by a ratio

wherein the ratio is obtained and rounded to a closest integer before multiplying (column 3, lines 42-51).

It would have been obvious to one having ordinary skill in the art to modify the invention of Kawahara, Chapman, and Progar to explicitly include calculating the compensation value as an integer closest to the ratio, as taught by Hirose, because the combination of Kawahara, Chapman, and Progar does teach applying the compensation value to the count value wherein the count value is an integer and Hirose suggests that the combination would have provided a sufficiently accurate count value while still obtaining a count value that is a whole number as is expected with regard to interrupt counts and count values in general (column 3, lines 42-51).

Response to Arguments

10. Applicant's arguments with respect to claims 1, 3-6, 9, 11-13, 15-23, 26, and 28-34 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure:

U.S. Patent No. 6,397,283 to Ting teaches a method of automatically adjusting interrupt frequency.

U.S. Patent No. 6,981,165 to Marik teaches a method and apparatus for handling an interrupt from a real-time clock to increment a program clock.

U.S. Patent No. 5,392,435 to Masui et al. teaches a microcomputer having a system clock frequency that varies in dependence on the number of nested and held interrupts.

U.S. Patent No. 5,535,380 to Bergkvist, Jr. et al. teaches a system to reduce latency for real time interrupts.

U.S. Patent No. 4,093,873 to Vannier et al. teaches a method for compensating digital counters for quartz crystal oscillators.

U.S. Patent No. 5,325,313 to Herbert et al. teaches a system for measuring timepiece beat interval accuracy.

U.S. Patent No. 4,708,491 to Luitje teaches a time of day clock.

JP Patent Application Publication No. 10-020052 to Nagaoka teaches a time correction method and device therefor.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and

any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey R. West whose telephone number is (571)272-2226. The examiner can normally be reached on Monday through Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (571)272-2216. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeffrey R. West
Examiner – AU 2857

July 24, 2006

MARC S. HOFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800